

Choose Health: Food, Fun, and Fitness Youth Curriculum Promotes Positive Behaviors

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ABSTRACT

Objective: Evaluate whether participation in *Choose Health: Food, Fun, and Fitness* (CHFFF), a hands-on, experiential curriculum aimed at third- to sixth-graders, resulted in improvements in the targeted obesity and chronic disease prevention behaviors.

Methods: The researchers evaluated CHFFF in low-income youth participating in 2 federal programs in New York State during 2013–2015. Food and activity behaviors were assessed using the *Expanded Food and Nutrition Education Program* third- through fifth- and sixth- through eighth-grade pre-post surveys, along with 2 sets of added CHFFF-specific items completed by subsamples. Educators trained in CHFFF had youth complete the surveys as they delivered the curriculum, primarily in schools and after-school programs.

Results: Paired *t* tests showed significant ($P < .01$) positive changes before to after CHFFF education for consumption of vegetables, fruits, sweetened drinks, nutrition label reading, and other food and activity behaviors.

Conclusions and Implications: Results provide practice-based evidence that CHFFF promotes positive behavior change in participating youth.

Key Words: child nutrition education, evaluation, food assistance programs, fruit, vegetable, sugar sweetened beverage (*J Nutr Educ Behav.* 2018;■■:■■–■■.)

Accepted September 16, 2017.

INTRODUCTION

Youth nutrition education is one of many strategies to reduce the high rates of childhood obesity and its dietary and physical activity precursors, and research suggested that it can be effective in changing some of these behaviors.¹⁻³ Children make many independent food and activity decisions, developing habits that frequently persist into adulthood. They need to be equipped with knowledge and skills to navigate obesogenic environments successfully.

Choose Health: Food, Fun and Fitness (CHFFF) is a 6-lesson curriculum aimed at third- to sixth-graders that uses experiential learning to teach healthful eating and active play. The goal

is to improve research-based behaviors for preventing obesity and chronic disease: eating more vegetables, fruits, and whole grains, consuming less sweetened drinks and high-fat and high-sugar foods, and increasing active play. The CHFFF curriculum was developed in 2010 to fill a void in evidence-based curricula focused on child obesity prevention behaviors practical for delivery in *Expanded Food and Nutrition Education Program* (EFNEP) and *Supplemental Nutrition Assistance Program–Education* (SNAP-Ed) settings; still today, the number of such curricula is limited.⁴ The components of CHFFF are based on Social Cognitive Theory,⁵ as described elsewhere,⁶ and it is structured to support the youth development Ex-

periential Learning Model.⁷ Research has shown that nutrition education is more effective when it is behaviorally focused.²

Each 45- to 90-minute lesson, intended to be delivered weekly, includes interactive nutrition activities (eg, label reading, measuring sugar in drinks and fat in fast foods), preparing or tasting healthy snacks, playing active games, and setting weekly goals. Recipes include at least 1 vegetable or fruit, and many include whole grains and/or foods new to participants. Colorful newsletters sent home to families include the recipe their child tasted and a personalized check-off box showing their child's weekly behavior goal.⁶

Choose Health: Food, Fun and Fitness helps meet the need for curricula that enhance knowledge and provide skill-building opportunities by breaking complex nutrition advice into easily understood, simple, clear, direct, and developmentally appropriate recommendations and activities.⁸ The aim of this research was to evaluate in practice the CHFFF curriculum delivered to low-income youth in New York. The hypothesis was that youth participating in CHFFF would

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Conflict of Interest Disclosure: The authors' conflict of interest disclosures can be found online with this article on www.jneb.org.

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<https://doi.org/10.1016/j.jneb.2017.09.008>

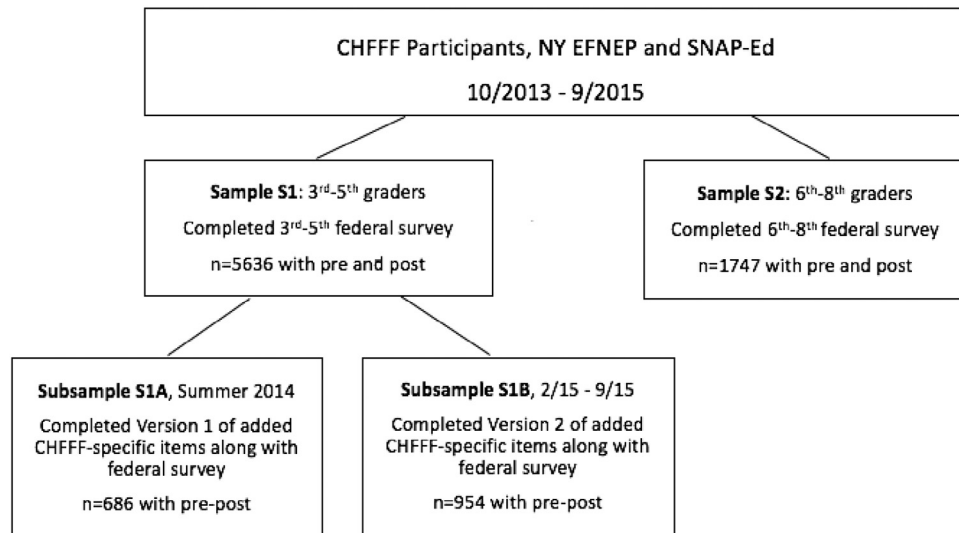


Figure. The two samples and two subsamples of *CHFFF* participants showing which survey items they completed and when. NY EFNEP indicates New York Expanded Food and Nutrition Education Program; SNAP-Ed, Supplemental Nutrition Assistance Program-Education.

report improvements from pre- to post-education in the targeted obesity and chronic disease prevention behaviors.

METHODS

Choose Health: Food, Fun and Fitness was evaluated as part of regular programming in NY EFNEP and SNAP-Ed, both of which provide nutrition education to low-income participants. Community educators, who were trained in delivering CHFFF and administering the evaluation surveys, taught CHFFF in school classrooms, after-school programs, and other pre-existing groups, as was standard practice. For consistency, educators kept records detailing completion of all parts of each lesson and any challenges. These were reviewed by their supervisors, who also performed periodic observations.

The evaluation was based on responses to CHFFF-relevant items in the standard federal EFNEP third- through fifth- and sixth- through eighth-grade pre-post paper surveys that all participating youth completed just before the first lesson and after the last lesson, plus 2 different versions of CHFFF-specific items added to the third- through fifth-grade federal survey during 2 different time periods (Figure). Cornell University's Institutional Review Board deemed the research

exempt because it was part of regular educational programming.

The federal grade-group specific EFNEP surveys were developed for use starting in October, 2013 by a multistate committee (including the first author) working with national leadership. Items were based on literature review and existing tools, followed by expert review and cognitive testing to enhance face and content validity (unpublished report). Survey items were limited in number to keep respondent burden low and allow survey administration in regular program settings. For the CHFFF evaluation, participants completing the third- through fifth-grade survey during the first 2 years constitute sample 1 (S1) and those completing the sixth- through eighth-grade survey constitute sample 2 (S2) (Figure). Some seventh- and eighth-graders participated in CHFFF, because experience showed that CHFFF also works well for those ages.

Because the third- through fifth-grade EFNEP survey was limited in addressing all of the CHFFF target behaviors, 6 CHFFF-specific items (version 1 of added items) were developed to enhance content validity based on literature review, existing surveys, educator input, and expert review. These were administered by educators in 5 counties (those who volunteered to a statewide request),

along with the federal survey, during summer, 2014 to subsample 1A (S1A). Based on new literature suggesting more quantitative response options and sweetened drinks assessed as 2 separate items (soda and fruit drinks),⁹ along with educator input and cognitive testing with 9 third- through fifth-graders, the question set was revised to 5 items in 2015 (version 2 of added items) and completed by subsample 1B (S1B). Table 1 lists characteristics of each sample.

Data Analysis

The researchers performed statistical analyses using SAS (version 9.4, SAS Institute Inc, Cary, NC, 2013). Pre-post changes in reported behavior, which approximated normality for all items, were analyzed using paired *t* tests and chi-square tests of independence with significance set at $P < .05$. Changes were analyzed for each individual behavior (Tables 2–5) and also for grade-group specific overall additive scores. For additive scores, each item was first scaled by dividing by its number of response options. The third- through fifth-grade overall score added up the 4 CHFFF-relevant federal survey items (Table 2) and the version 2 added items (all items in Table 4, excluding nutrition facts labels because it was conceptually different). The sixth- through eighth-grade overall

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